

CLEAN VERSION OF CHANGES MADE

IN THE SPECIFICATION:

Page 6, last paragraph bridging pages 6 and 7:

Further, the coaxial element wire is constructed by using as the outer conductor a ribbon-shaped conductor obtained by pressing and flattening a copper or copper alloy round wire and helically wrapping the ribbon-shaped conductor around the insulation layer. Figure 1 is a perspective view schematically showing a single-core coaxial cable employing a typical coaxial element wire of the present invention. Referring to FIG. 1, reference numeral 1 denotes a center conductor of copper, copper alloy, or the like, 2 denotes an insulation layer made of PFA, polyester, polyimide film, or the like, 3 denotes a ribbon-shaped conductor as an outer conductor whose cross-section is virtually a rectangle having its four corners smoothed, and 4 is an outer jacket. The ribbon-shaped conductor 3 can be produced by such a method as chamfering four corners of a rectangular conductor. It can also be manufactured by pressing and flattening a copper or copper alloy round wire, which is advantageous in terms of production cost. The ribbon-shaped conductor is helically wrapped around the insulation layer 2 to provide the outer conductor. In Fig. 1, the combination of the center conductor 1, insulation layer 2, and outer conductor 3 is labeled with reference number 5.

[Page 7, first full paragraph:]

(1) Thickness of the insulation layer: Since the setting position or angle of electronic apparatuses such as notebook computers and sensors for medical purposes are manually changed, there are increasing demands for further downsized and light weight apparatuses. Hence, narrower coaxial cables are being demanded. When a coaxial cable is deformed by rotation or bending of a portion of a device in which it is disposed, strain is imposed on the

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coaxial cable, especially on its outer conductor, and such strain becomes greater, accompanied by an increase in produced noises, with the increase of the outer diameter. Therefore, the insulation layer 2 and the coaxial element wire constituting the coaxial cable of the invention are required to have a thickness as thin as 0.15 mm or less. While it is preferred that the insulation layer 2 thickness be as small as possible, since it is subjected to deformation by repeated bending or torsion during the service period, it is desired that it be given a thickness of, for example, 0.3 mm or more, which is considered to be the minimum value when mechanical strength and flexibility are taken into account.

[Page 8, first full paragraph:]

(2) Outer conductor: The ribbon-shaped conductor 3, which is formed by pressing and flattening a round wire made of a metal, such as copper, copper alloy, or the like, is helically wrapped around the insulation layer 2 to form the outer conductor.

[Page 8, second paragraph:]

Since such a ribbon-shaped conductor 3 is obtained by pressing a round wire, the cross section thereof has a smooth form at the four corners, and takes on virtually a rectangular form not having any acute edge all along the circumference. The outer conductor is constructed by wrapping the ribbon-shaped conductor 3 around the insulation layer 2 with one long side of the virtually rectangular form facing the insulation layer 2. Because the ribbon-shaped conductor 3 has such a form, it can be provided free from an acute edge as was produced in the slit tape in the conventional art and, therefore, injury to the insulation layer 2 or localization of voltage rarely occurs so that a stabilized insulating withstand-voltage characteristic can be obtained. Further, since a round wire made of copper or copper alloy is pressed and flattened to be used as the ribbon-shaped conductor 3 without annealing, a merit can be obtained such that the ribbon-

shaped conductor 3 can be wrapped up so as not to become loose, without the need for braiding as was practiced in the method of the conventional art. When wrapping the ribbon-shaped conductor 3, it must be kept under a tension not impairing the characteristic of the insulation layer 2, while enabling the wrapped up ribbon-shaped conductor to constantly fasten the insulation layer 2, and under such a tension that will not cause the coaxial element wire or the coaxial cable to be damaged when the same is bent or twisted. It is preferred that the tension be not smaller than 30% and not greater than 80% of the tensile strength of the ribbon-shaped conductor 3. Further, a layer obtained by depositing a metal on a thin tape may be disposed under the outer conductor. Then, both an improvement in the shielding effect and an increase in the insulating withstand-voltage of the insulation layer 2 can be attained.

[Page 9, first paragraph:]

The wrapping angle (ϕ) of the ribbon-shaped conductor 3 is preferably 45 degrees or more for providing flexibility. (The wrapping angle ϕ is illustrated in Fig. 2(A)(2).) While it is more preferably 60 degrees or more, if it is increased close to 90 degrees, the productivity is greatly decreased and it is undesirable. Therefore, the maximum limit for the wrapping angle ϕ is approximately 80 degrees. As to the size of the outer conductor, it is desired that the thickness be 0.03 mm or less in order to reduce the outer diameter of the coaxial element wire and the coaxial cable and, in view of the mechanical strength, it is desired that it be not smaller than 0.01 mm. From the viewpoint of maintaining the characteristics which the outer conductor should have, it is better for the ribbon-shaped conductor 3 to have a large width, preferably 0.1 mm or more. However, from the point of view of the operability of the wrapping operation and the cost of production, one having a width of 0.3 mm or less is preferable because that small of a width is economical in material costs and allows the wrapping work to be made free of wrinkle

formation. Especially from the point of view of electrical characteristics, mechanical characteristics, and workability, a tape-shaped conductor 0.025 mm thick and 0.20 mm wide manufactured by pressing a round wire of 0.08 mm in outer diameter or a tape-shaped conductor 0.012 mm thick and 0.18 mm wide manufactured by pressing a round wire of 0.05 mm in outer diameter have excellent characteristics as the outer conductor.

[Page 9, second paragraph bridging pages 9 and 10:]

A1 (3) Multicore cable: Especially in the case of the multicore cable of the present invention, regardless of whether manufactured by having coaxial element wires assembled and provided with a common jacket, by having single-core coaxial cables assembled and provided with a common jacket, or by having coaxial element wires having outer conductors combined and in contact with one another without individual jackets, there is no danger of the insulation layer 2 being injured by the outer conductor even if the coaxial element wires are subjected to a force applied from the side, i.e., a lateral pressure, when they are twisted for assembling work or the like, since the outer conductor of the coaxial element wires has a smooth surface free from an acute edge along its circumference as a result of manufacture from a round wire by pressing.

Page 10, third full paragraph:

A2 For use as the outer conductor, a tin-plated round wire 40 of a copper alloy of 0.05 mm in outer diameter having a cross section as shown in FIG. 5(A) was pressed and thereby a long ribbon-shaped conductor 42 0.012 mm thick and 0.18 mm wide having a cross section as shown in FIG. 5(B) was manufactured. As the insulation layer 2, PFA (tetrafluoroethylene-perfluoroalkylvinylether copolymer) resin was extruded to cover the periphery of a center conductor 1 of 0.09 mm in outer diameter (seven tin-plated copper-alloy wires of 30 μ m in outer diameter being stranded) by a known extruding and covering method so

that a circular profile of 0.23 mm in outer diameter is formed. Then, the above described tape-shaped conductor (42) was helically wrapped around the same, so as to form an angle ϕ of 68 degrees with respect to the axis of the coaxial element wire, by open wrapping as shown in FIGS. 2(A)(1) and 2(A)(2), spaced apart at a pitch of 0.29 mm, under a tension of 60 gf per piece. In this manner, a coaxial element wire was manufactured.

Page 11, second full paragraph:

Withstand voltage test: Using a coaxial element wire of 300 m length, a DC voltage of 1000 V was applied between the center conductor 1 and the outer conductor for one minute, and the occurrence of any dielectric breakdown was checked for. As a result, there was no fault observed, such as to break down the insulation layer 2, with respect to the withstand voltage. Thus, it has been confirmed that the coaxial element wire has good characteristics as a coaxial cable.

Page 12, last paragraph bridging pages 12 and 13:

Then, as shown in FIG. 3(A), 10 pieces of coaxial element wires, each including a central conductor 1, an insulating layer 2, and an outer conductor according to the invention, were arranged in parallel, and they were wrapped up by an adhesive-coated polyester tape, as a jacket 6, so as to be formed into a flat type multicore cable. Further, 30 pieces of said single-core coaxial wires were twisted together and provided with a common jacket on the outside. Thereby, a multicore cable being small in diameter while having flexibility and mechanical durability required of a multicore cable was obtained. Also, excellent insulating and other characteristics have been confirmed with the multicore cables thus obtained.